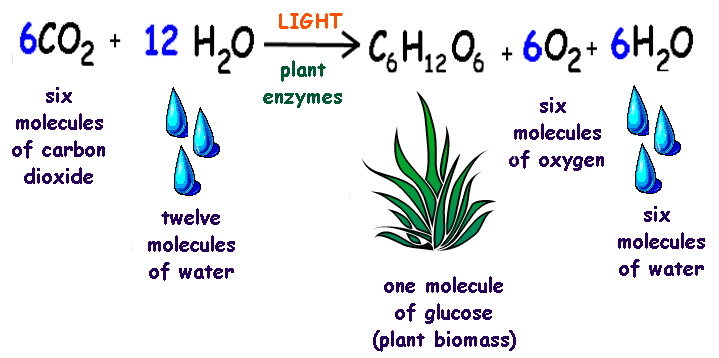
**Metabolic Processes**

**October 29, 2013 Julie Nguyen**

**Summary**

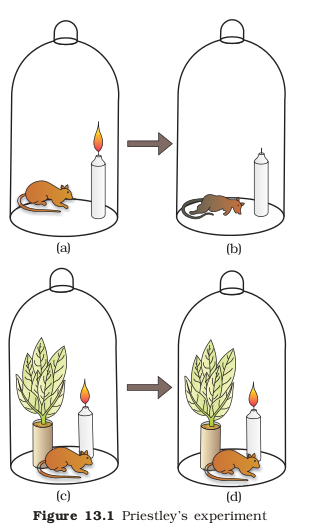
Photosynthesis Overview

* Supports he energy transformations of the entire biosphere
* Process of converting light energy to chemical energy and storing it in the bonds of sugar
* Occurs in plants and some algae (Kingdom Protista)
* Plants need only light energy, CO2, and H2O to make sugar.
* Takes place in the [chloroplasts](javascript:ShowIt('Chloroplast'))
* Using [chlorophyll](javascript:ShowIt('Chlorophyll')), the green pigment involved in photosynthesis.

Part 1. Early Experiments

* Van Helmont (1648) planted a tree in 200Lb of soil. Covered soil with q perforated plate to prevent soil from being added or removed. Watered the tree for five years using distilled water. After five years, he removed the tree.The willow had grown from 2.2 kilograms (5 pounds) to 77 kilograms (169 pounds), while the dry weight of the soil had lost only 57 grams (2 ounces). Therefore, Van Helmont demonstrated that plants do not simply take up soil as they grow, and concluded that water was source of this increased weight
* Priestly (1722) Burning candle in sealed jar. Plants “refresh the air”.
* Ingert-Housz (1778) Plants “refresh” the air only if the plant exposed to light.
* Jean Senebier- Plants take in CO2, only the green parts liberate 02.
* Willstatter and Stoll: chlorophyll a and chlorophyll b absorb red and violet light
* T.W. Engelmann (1881) Algae and Spectrum
* Van Neil (1930) Purple sulphur bacteria, is H2o analogous to H2O7
* Emerson (1957) Two beams of light

**Video Notes (Part 1 of Video on Photosynthesis: early experiments)**

* Joseph Priestly

-Plant in jar died

-Candle in a jar went out

-Candle in a jar with plant remained and plant lived

-Put mouse in jar and died

-Mouse with plant in jar, lived

* Jan Ingen-Housz

-Sunlight required

-Only green plant of plant involved inplants

* Senebier

-Co2 is needed

**Overview of Class**

* Photosynthesis
* Early Experiments
* Watched a video and took notes

**HOMEWORK**

* Read 212-219
* Do # 2-5 + 5a